

Having thus, described the invention, what is claimed is:

- 1 1. An exhaust muffler for use with an internal combustion engine, said exhaust
2 muffler comprising:
3 a hollow main body having a plurality of bulkheads therein, said bulkheads
4 dividing the interior of said main body into a plurality of expansion chambers;
5 said main body being connectable to an exhaust pipe of an internal combustion
6 engine;
7 a plurality of communicating pipes fixed in said main body so as to connect the
8 expansion chambers; and
9 a spark arrester which is removably attachable to said main body and which
10 comprises a tail pipe;
11 wherein said muffler is configured such that when the spark arrester is attached to
12 said main body, exhaust flow is made to pass through at least one bulkhead three times
13 by the spark arrester installed so as to connect the expansion chambers and by the
14 plurality of communicating pipes fixed so as to connect the expansion chambers,
15 and when the spark arrester is removed, exhaust flow may pass through the
16 communicating pipes and may bypass one of the plurality of expansion chambers so as to
17 be released to the outside.

- 1 2. An exhaust muffler for use with an internal combustion engine, said exhaust
2 muffler comprising:

3 a hollow main body having a plurality of bulkheads therein, said bulkheads
4 dividing the interior of said main body into a plurality of expansion chambers;
5 said main body being connectable to an exhaust pipe of an internal combustion
6 engine;
7 a plurality of communicating pipes fixed in said main body so as to connect the
8 expansion chambers; and
9 a spark arrester which is removably attachable to said main body and which
10 comprises a tail pipe,
11 wherein said muffler is configured such that when the spark arrester is installed,
12 exhaust flow is made to pass through at least one bulkhead three times by the spark
13 arrester installed so as to connect the expansion chambers and by the plurality of
14 communicating pipes fixed so as to connect the expansion chambers,
15 and when the spark arrester is removed, exhaust flow may pass straight through a
16 through-hole opening in each of the bulkheads and outwardly from said main body so as
17 to be released outside of said exhaust muffler.

1 3. The exhaust muffler for an internal combustion engine of claim 2, wherein a seal
2 is provided between one of said bulkheads and the spark arrester, and wherein the seal
3 comprises a sliding part or elastic part permitting extension and retraction of the tail pipe
4 in the lengthwise direction thereof relative to said bulkhead.

1 4. An exhaust muffler system for use with an internal combustion engine, said
2 exhaust muffler system comprising:

3 a hollow main body defining an enclosed space therein, said main body having
4 first and second bulkheads therein which operate to separate said enclosed space into a
5 plurality of expansion chambers, said second bulkhead having a hole formed
6 therethrough for receiving a spark arrester;
7 said main body being connectable to an exhaust pipe of an internal combustion
8 engine;
9 a plurality of communicating pipes fixed in said main body so as to connect the
10 expansion chambers;
11 a regular spark arrester which is selectively removably attachable to said main
12 body to define a regular configuration of said muffler system for use in public road travel,
13 and which comprises a tail pipe, wherein a portion of said regular spark arrester fits
14 through said hole in said second bulkhead; and
15 a racing spark arrester which is alternately attachable to said main body to define
16 a racing configuration of said muffler system, wherein said hole in said second bulkhead
17 is left open and unobstructed in said racing configuration.

1 5. The exhaust system of claim 4, wherein said bulkheads, said communicating pipes and
2 said regular spark arrester cooperate to define an exhaust flow path through said main
3 body in the regular configuration of said system, said flow path passing through said
4 second bulkhead three times before exiting from said tail pipe.

1 6. The exhaust system of claim 4, further comprising a seal for placement between one of
2 said bulkheads and the regular spark arrester, and wherein the seal is configured to permit

3 extension and retraction of the tail pipe in the lengthwise direction thereof relative to said
4 bulkhead.

1 7. The exhaust system of claim 4, wherein the first bulkhead has a hole formed
2 therethrough to slidably receive a front end of said spark arrester.

1 8. The exhaust system of claim 7, further comprising a seal for placement between said
2 first bulkhead and the regular spark arrester, wherein the seal is configured to permit
3 extension and retraction of the tail pipe in the lengthwise direction thereof relative to said
4 bulkhead.

1 9. An exhaust muffler system for use with an internal combustion engine, said exhaust
2 muffler system comprising:

3 a hollow main body defining an enclosed space therein, said main body having a
4 plurality of bulkheads therein which operate to separate said enclosed space into a
5 plurality of expansion chambers, at least one of said bulkheads having a hole formed
6 therethrough for receiving a spark arrester;

7 said main body being connectable to an exhaust pipe of an internal combustion
8 engine;

9 a plurality of communicating pipes fixed in said main body so as to connect the
10 expansion chambers;

11 a regular spark arrester which is selectively removably attachable to said main
12 body to define a regular configuration of said muffler system for use in public road
13 travel; and
14 a racing spark arrester which is alternately attachable to said main body to define
15 a racing configuration of said muffler system.

1 10. The exhaust system of claim 9, wherein said bulkheads, said communicating
2 pipes and said regular spark arrester cooperate to define an exhaust flow path through
3 said main body in the regular configuration of said system, said flow path passing
4 through one of said bulkheads three times before exiting from said tail pipe.

1 11. The exhaust system of claim 9, further comprising a seal for placement
2 between one of said bulkheads and the regular spark arrester, and wherein the seal is
3 configured to permit extension and retraction of the tail pipe in the lengthwise direction
4 thereof relative to said bulkhead.